

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A display apparatus that reproduces an image by applying light from a backlight to a display panel and controlling light transmittance states of pixels provided, on the display panel, in a matrix manner,

wherein,

the display panel includes a micro lens array, provided on the display panel so as to face the backlight, which includes a group of micro lenses corresponding to the pixels,

the pixels on the display panel are disposed in a matrix manner and along a first direction and a second direction orthogonal to the first direction, and a pitch of the pixels in the first direction is longer than a pitch of the pixels in the second direction, and

the backlight irradiates the micro lens array with light that is higher in directivity at an angle of irradiation along the first direction than at an angle ~~[[or]]~~ of irradiation along the second direction.

2. (Original) The display apparatus as defined in claim 1, wherein, an intensity-half-width angle of the light traveling in the first direction is not more than $\pm 20^\circ$.

3. (Original) The display apparatus as defined in claim 1, wherein, the micro lenses are lenticular lenses each collecting light traveling in the first direction.

4. (Original) The display apparatus as defined in claim 1, wherein, in the first direction, a converging angle of each of the micro lenses is within a range between 20° and 30°.

5. (Previously Presented) The display apparatus as defined in claim 1, wherein, each of the micro lenses is a micro-scale lens that one-to-one corresponds to a pixel and can collect light traveling in the first direction and the second direction.

6. (Previously Presented) The display apparatus as defined in claim 1, wherein, a distance between a focal point of each of the micro lenses and the pixels on the display panel is in a range not more than 1/3 of a distance between the micro lenses and the pixels.

7. (Previously Presented) The display apparatus as defined in claim 6, wherein, while the distance is in said range, the focal point is closer to the micro lenses than to the pixels.

8. (Previously Presented) A method for manufacturing the display apparatus as defined in claim 1, comprising:

manufacturing the micro lenses including steps comprising:

(a) applying photosensitive resin, which is a material of the micro lenses, to a surface of the display panel, the surface being on a backlight side;

(b) exposing the photosensitive resin material to light, through pixel apertures of the display panel; and

(c) developing the photosensitive resin material that has been subjected to exposure.

9. (Original) The display apparatus as defined in claim 1, wherein,
the display panel is provided with a linear polarization plate, and the light emitted from the backlight is linearly polarized, and
a main polarization direction of light entering the linear polarization plate is in parallel to a transmission axis of the polarization plate.

10. (Original) The display apparatus as defined in claim 9, wherein, the main polarization direction is in parallel to the first direction.

11. (Original) The display apparatus as defined in claim 9, wherein, a polarization cross angle between the transmission axis of the linear polarization plate and the main polarization direction is not more than a range of $\pm 20^\circ$.

12. (Previously Presented) The display apparatus as defined in claim 11, wherein, between the display panel and the backlight, a polarization rotation element for causing the polarization cross angle to be within said range is provided.

13. (Original) The display apparatus as defined in claim 1, wherein, a polarization plate, which allows linearly-polarized light emitted from the backlight and vibrating in one direction to pass through, is attached on a surface of the backlight, the surface being on a display panel side.

14. (Original) The display apparatus as defined in claim 1, wherein, the display panel is a liquid crystal panel.

15. (Original) An electronic device, comprising the display apparatus defined in claim 14.

16. (Previously Presented) A display apparatus that reproduces an image by applying light from a backlight to a display panel and controlling light transmittance states of pixels provided, on the display panel, in a matrix manner,

wherein,

the display panel includes a micro lens array including a group of micro lenses corresponding to the pixels,

the pixels on the display panel are disposed in a matrix manner and along a first direction and a second direction orthogonal to the first direction, and a pitch of the pixels in the first direction is longer than a pitch of the pixels in the second direction, and each of the pixels has a rectangular shape that is short in the second direction while long in the first direction,

an intensity-half-width angle of the light, emitted from the backlight and yet to reach the micro lens array, is not more than $\pm 20^\circ$ in the first direction and the second direction, the intensity-half-width angle being an angle of emission of the light along the first direction and the second direction, and

the light from the backlight traveling in the first direction is collected by the micro lens array.

17. (Original) The display apparatus as defined in claim 16, wherein, the display panel is a liquid crystal panel.

18. (Original) An electronic device, comprising the display apparatus defined in claim 16.

19. (Currently Amended) A display apparatus that reproduces an image by applying light from a backlight to a display panel and controlling light transmittance states of pixels provided, on the display panel, in a matrix manner, wherein, the display panel comprises:

a micro lens array, provided on the display panel so as to face the backlight, which includes a group of micro lenses corresponding to the pixels,

the pixels on the display panel are disposed in a matrix manner and along a first direction and a second direction orthogonal to the first direction, and a pitch of the pixels in the first direction is longer than a pitch of the pixels in the second direction,

the backlight irradiates the micro lens array with light that is higher in directivity at an angle ~~[[or]]~~ of irradiation along the first direction than at an angle of irradiation along the second direction,

wherein the display panel is provided with a linear polarization plate, and the light emitted from the backlight is linearly polarized,

wherein a main polarization direction of light entering the linear polarization plate is in parallel to a transmission axis of the polarization plate, and

wherein the main polarization direction is in parallel to the first direction.

20. (Previously Presented) A display apparatus that reproduces an image by applying light from a backlight to a display panel and controlling light transmittance states of pixels provided, on the display panel, in a matrix manner, wherein, the display panel comprises:

a micro lens array, provided on the display panel so as to face the backlight, which includes a group of micro lenses corresponding to the pixels,

the pixels on the display panel are disposed in a matrix manner and along a first direction and a second direction orthogonal to the first direction, and a pitch of the pixels in the first direction is longer than a pitch of the pixels in the second direction,

the backlight irradiates the micro lens array with light that is higher in directivity at an angle of irradiation along the first direction than at an angle of irradiation along the second direction,

wherein the display panel is provided with a linear polarization plate, and the light emitted from the backlight is linearly polarized,

wherein a main polarization direction of light entering the linear polarization plate is in parallel to a transmission axis of the polarization plate, and

wherein a polarization cross angle between the transmission axis of the linear polarization plate and the main polarization direction is not more than a range of $\pm 20^\circ$.

21. (Previously Presented) A display apparatus that reproduces an image by applying light from a backlight to a display panel and controlling light transmittance states of pixels provided, on the display panel, in a matrix manner, wherein the display panel comprises:

a micro lens array including a group of micro lenses corresponding to the pixels,

the pixels on the display panel are disposed in a matrix manner and along a first direction and a second direction orthogonal to the first direction, and a pitch of the pixels in the first direction is longer than a pitch of the pixels in the second direction, and each of the pixels has a rectangular shape that is short in the second direction while long in the first direction,

an intensity-half-width angle of the light, emitted from the backlight and yet to reach the micro lens array, is not more than $\pm 20^\circ$ in the first direction and the second direction, the intensity-half-width angle being an angle of emission of the light along the first direction and the second direction, and

the light traveling in the first direction is collected by the micro lens array,

wherein the display panel is provided with a linear polarization plate, and the light emitted from the backlight is linearly polarized,

wherein a main polarization direction of light entering the linear polarization plate is in parallel to a transmission axis of the polarization plate, and

wherein the main polarization direction is in parallel to the first direction.

22. (Previously Presented) A display apparatus that reproduces an image by applying light from a backlight to a display panel and controlling light transmittance states of pixels provided, on the display panel, in a matrix manner, wherein the display panel comprises:

a micro lens array including a group of micro lenses corresponding to the pixels,

the pixels on the display panel are disposed in a matrix manner and along a first direction and a second direction orthogonal to the first direction, and a pitch of the pixels in the first direction is longer than a pitch of the pixels in the second direction, and each of the pixels has a rectangular shape that is short in the second direction while long in the first direction,

an intensity-half-width angle of the light, emitted from the backlight and yet to reach the micro lens array, is not more than $\pm 20^\circ$ in the first direction and the second direction, the intensity-half-width angle being an angle of emission of the light along the first direction and the second direction, and

the light traveling in the first direction is collected by the micro lens array,
wherein the display panel is provided with a linear polarization plate, and the light emitted from the backlight is linearly polarized,

wherein a main polarization direction of light entering the linear polarization plate is in parallel to a transmission axis of the polarization plate, and

wherein a polarization cross angle between the transmission axis of the linear polarization plate and the main polarization direction is not more than a range of $\pm 20^\circ$.

23. (Previously Presented) The display apparatus as defined in claim 1, wherein each of the pixels has a rectangular shape that is short in the second direction while long in the first direction.

24. (Previously Presented) The display apparatus as defined in claim 1, wherein the backlight includes an optical waveguide and dot-shaped light sources that irradiate the optical waveguide with light,

the dot-shaped light sources being linearly disposed so as to face that side of the optical waveguide which extends along the second direction.

25. (Previously Presented) The display apparatus as defined in claim 1, wherein the backlight includes an optical waveguide and a cold-cathode tube that irradiates the optical waveguide with light,

the cold-cathode tube being disposed so as to face that side of the optical waveguide which extends along the first direction.

26. (Previously Presented) The display apparatus as defined in claim 16, wherein the backlight irradiates the micro lens array with light that is higher in directivity along the first direction than along the second direction.